

ABSTRACT:

In this paper we define parabolic chord arc domains and generalize a theorem of Semmes concerning quantitative approximation by graphs with small Lipschitz constants. Using this generalization we show that in a parabolic chord arc domain with vanishing constant, the logarithm of the density of caloric measure with respect to a certain projective Lebesgue measure is of vanishing mean oscillation. We also obtain a partial converse to this result. Our work generalizes to the heat equation, recent work of Kenig and Toro for the Laplacian.